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PATENT APPLICATION  
Docket No. 11527.209.2

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8/2/02

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Per Just Andersen, Ph.D. )  
and Simon K. Hodson )  
Serial No. 09/390,583 ) Appeal No.  
Filed: September 2, 1999 )  
For: COATED STARCH-BASED COMPOSITIONS )  
AND METHODS FOR MANUFACTURING )  
STARCH-BASED COMPOSITIONS )  
Examiner: Leanna M. Roche )  
Art Unit: 1771 )

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APPEAL BRIEF OF APPELLANTS

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Appellants Per Just Andersen, Ph.D. and Simon K. Hodson have previously filed a timely Notice of Appeal from the action of the Primary Examiner in finally rejecting all of the claims in this application. This Brief is being filed under the provisions of 35 U.S.C. § 134 (a) and 37 C.F.R. § 1.192.

REAL PARTY IN INTEREST

E. Khashoggi Industries, LLC is the real party in interest, as evidenced by the assignment from Appellants Per Just Andersen, Ph.D. and Simon K. Hodson recorded at reel 8761, frame 333.

## RELATED APPEALS AND INTERFERENCES

None.

## STATUS OF CLAIMS

Pending claims: 32-57.

Cancelled claims: 1-31 (originally issued claims).

Rejected claims: 32-57.

Appealed claims: 32-57.

## STATUS OF AMENDMENTS

No amendment was filed after the final rejection dated March 6, 2002.

## SUMMARY OF THE INVENTION

The claimed invention on appeal is a composite composition that comprises a fiber-reinforced starch-based composition as a first region of the composite composition and a coating composition as a second region adjacent to the first region. Claims 32, 46 and 52. The combination of a starch-based composition and a coating composition as recited in claims 32, 46 and 52 has been deemed by the Examiner to be fully supported in the specification and patentable over the prior art of record. *See* Office Action dated March 6, 2002.

The fiber-reinforced starch-based composition is formed from an intermediate aqueous composition comprising, among other things, water, a starch-based binder, and a fibrous material. The starch-based binder initially comprises both gelatinized and ungelatinized starch granules. The fibers have an aspect ratio of at least about 10:1 in order for them to impart a strengthening effect in the final solidified “fiber-reinforced starch-based composition”. The gelatinized starch and water interact together in order to increase the viscosity of the intermediate aqueous composition, which aids in dispersing the fibers throughout the composition. Good dispersion increases the strength of

the hardened composition. The intermediate aqueous composition is formed into the fiber-reinforced starch-based composition by heating the aqueous composition so as to at least partially gelatinize the starch granules and so as to also remove at least a portion of the water by evaporation to thereby cause the starch-based binder to become at least partially solidified. Claims 32, 46 and 52.

The second region is formed by positioning a coating composition adjacent to the fiber-reinforced starch-based composition. *Id.* The coating composition may be resistant to moisture and/or biodegradable and/or a laminate composition. *Id.*

### ISSUES

1. Whether claims 32-57 are proper for reissue under 35 U.S.C. § 251 or whether they seek to improperly recapture subject matter that was surrendered during prosecution of the original patent (*i.e.*, U.S. Patent No. 5,662,731).
2. Whether reissue claims 32-57 that broaden an unamended limitation included in the originally filed claims and relied upon to distinguish over cited art during prosecution of the original patent avoid the recapture rule because they include other limitations that have a materially narrowing effect such that claims 32-57 are not as broad or broader as compared to any claims cancelled during prosecution of the original patent.
3. Whether claims 32-57 include a materially narrowing aspect that is sufficiently related to the broadened claim limitation.

### GROUPING OF CLAIMS

Claims 32-57 stand or fall together.

## ARGUMENT

### **I. SUMMARY OF OFFICE ACTION DATED MARCH 6, 2002.**

The Office Action dated March 6, 2002 (“Office Action”) finally rejected claims 32-57 under 35 U.S.C. § 251 as “being an improper recapture of claimed subject matter deliberately cancelled in the application for the patent upon which the present reissue is based.” In making the rejection, the Examiner quoted the following rule articulated by the Federal Circuit:

“The recapture rule bars the patentee from acquiring, through reissue, *claims that are of the same or broader scope* than those claims that were cancelled from the original application.”

Office Action, p. 2, (quoting *Ball Corp. v. United States*, 221 USPQ 289, 295, 729 F.2d 1429, (Fed. Cir. 1984) (emphasis added)).

The Examiner made no attempt, however, to show that any of the reissue claims is “of the same or broader scope than claims that were cancelled from the original application.” Instead, the Examiner only focused on a single limitation that was broadened during reissue while entirely ignoring the scope of the claims as a whole:

The newly amended claims do not contain the limitation that the fibrous material has an average fiber length of greater than about 2 mm. The newly amended claims contain the limitation that the fibrous material has a fiber length less than about 25 mm. [sic] Therefore, the newly amended claims read on something that the original claims do not. Specifically, the newly amended claims read on materials, which contain a fibrous material, having an average fiber length of less than about 2 mm.

Office Action, p. 2. In making this argument, the Examiner ignored the following statement in *Ball*: “The proper focus is on the *scope*, of the claims, not on the individual *features* or *elements* purportedly given up during prosecution of the original application. *Ball*, 729 F.2d 1437 (emphasis in original).

The Examiner completed its analysis by arguing that, because Applicants relied on the “about 2 mm” language to distinguish over Tiefenbacher et al., the reissue claims improperly recapture subject matter surrendered during prosecution of the original patent. The Examiner refused to consider the overall scope of the reissue claims, particularly the effect that other narrowing limitations having a material aspect had in more narrowly defining the subject matter of the reissue claims compared to the claims in the original patent. Instead, the Examiner simply concluded that “the reissue claims were not narrowed in any material respect compared with their broadening.”

It should be pointed out that the “about 2 mm” language was not added by amendment during prosecution but was included in the originally filed claims. Although the Office Action glosses over this point, previous office actions addressed this issue by citing to *Hester Indus., Inc. v. Stein, Inc.*, 142 F.3d 1472, 1481, 46 USPQ2d 1641 (Fed. Cir. 1998), the only Federal Circuit decision to apply the recapture rule in a case involving a “surrender by way of argument” instead of “claim amendments or cancellations.” *Hester*, 142 F.3d at 1481. Because *Hester* is the only Federal Circuit decision directly on point (*i.e.*, because the present reissue claims omit a limitation that was included in the originally filed claims but not added by amendment or included in a cancelled claim), the Examiner should have paid special attention to the recapture rule articulated therein, which reads as follows:

Finally, because the recapture rule may be avoided in some circumstances, we consider whether the reissue claims were materially narrowed in other respects [*i.e.*, to offset the effect of broadening a claim limitation relied on for patentability]. *See, e.g., Mentor [Corp v. Colorplast, Inc.], 998 F.2d [992,] 996, 27 USPQ2d [1521,] 1525 [(Fed. Cir. 1993)]* (“Reissue claims that are broader in certain respects and narrower in others may avoid the effect of the recapture rule.”); [*In re Clement*, 131 F.3d [1464,] 1470, 45 USPQ2d [1161,] 1165 [(Fed. Cir. 1997)]. For example, in *Ball* the recapture rule was avoided because the reissue claims were sufficiently narrowed (described by the court as “fundamental narrowness”) despite the broadened aspects of the claims. 729 F.2d at 1438, 221 USPQ at 296. In the context of a *surrender by way of argument*, this principle, in appropriate cases, may operate

to overcome the recapture rule when the reissue claims are *materially narrower* in *other overlooked aspects of the invention*. The purpose of this exception to the recapture rule is to allow the patentee to obtain through reissue a scope of protection *to which he is rightfully entitled* for such *overlooked aspects*.

*Hester*, 142 F.3d at 1482-83 (emphasis added).

Though it held in *Hester* that a surrender can occur “by way of argument” alone, the Federal Circuit also found that the recapture rule “may be avoided [if] the reissue claims were materially narrowed in other respects.” *Hester*, 142 F.3d at 1482. This “exception to the recapture rule” requires the claims to be “materially narrow in other overlooked aspects of the invention” and “allow[s] the patentee to obtain through reissue a scope of protection to which he is rightfully entitled for such overlooked aspects.” *Hester*, 142 F.3d at 1482-83. Nowhere does *Hester* hold or even imply that the narrowing limitation relating to such “overlooked aspects of the invention” must directly, or even indirectly, relate to the broadened claim limitation at issue in the context of a “surrender by way of argument”, as argued by the Examiner at page 5 of the Office Action. Instead, *Hester* merely requires the narrowing limitation to contain “fundamental narrowness” (*i.e.*, it must materially narrow the scope of the claim rather than provide only superficial or illusory narrowing). *See Hester*, 142 F.3d at 1482-83.

In rejecting the reissue claims as constituting improper recapture of surrendered subject matter, the court in *Hester* found that the limitations relied upon by the patentee to avoid the recapture rule were actually *broader* than the limitations found in the originally filed claims. *Hester*, 142 F.3d at 1483 (“the term ‘high humidity steam’ is actually the same or broader than the limitation in original claim 1 that this term replaced” and “[t]he term ‘spiral conveyance path’ is also not materially limiting”). “In sum, neither alone nor together do the terms ‘high humidity steam’ and ‘spiral conveyance path’ materially narrow the claims.” *Id.*

The court also found that “the ‘spiral conveyance path’ and ‘high humidity steam’ [we]re not aspects of the invention that were overlooked during prosecution of the original patent.” *Id.* “To the contrary. . . , these aspects were included in original claim 1.” *Id.* Thus, the court in *Hester* indicated that limitations found in the originally filed claims normally do not constitute “overlooked aspects of the invention,” thus strongly suggesting that limitations *not found* in the originally filed claims *would* constitute “overlooked aspects of the invention”.

In the present case, the reissue claims contain materially narrowing limitations *not found* in the originally filed claims (e.g., limitations directed to the coating composition and the reinforcing and strengthening effect of the fibrous material). Such materially narrowing limitations are directed to “overlooked aspects of the invention” precisely because they were never contained in any pending or issued claim of the original patent according to *Hester*. *See id.* Thus, the reissue claims define “a scope of protection to which [Appellants are] rightfully entitled for such overlooked aspects” according to *Hester*. *See id.*

Notwithstanding Applicants’ efforts to comply with *Hester* (i.e., by including materially narrowing limitations directed to “other overlooked aspect of the invention” in order to fall within the “exception to the recapture rule” for a case involving a “surrender by way of argument”), and notwithstanding Applicants’ repeated arguments relating to the “exception to the recapture rule” in each of Amendments C-E, the Office Action finally rejected the claims as improperly recapturing surrendered subject matter solely because they omitted the “about 2 mm” language found in the originally filed claims.

The Examiner improperly failed to apply the “exception to the recapture rule” articulated in *Hester* for a case involving a “surrender by way of argument” by refusing to consider the effect of including materially narrowing claim limitations, even though the claims objectively cover “other overlooked aspects of the invention” as defined by the Federal Circuit in *Hester*. The

Examiner cited two alternative but improper grounds for reaching her conclusion: (1) a misapplication of the two-part test in MPEP 1412.02 and (2) the incorrect assertion that “the narrowing aspects do not deal with the fibrous material, but rather the coating material and process of forming the composite composition.” Office Action, p. 5. In making this rejection, the Examiner entirely ignored *Hester*. Worse, the Examiner was completely nonresponsive to each of Appellants’ arguments in Amendments C-E showing how the reissue claims comply with the “exception to the recapture rule” in a case involving a “surrender by way of argument”, as provided by *Hester*. Since *Hester* is the only Federal Circuit decision that ever involved a “surrender by way of argument” instead of a surrender by claim amendment or cancellation, the Examiner consciously and deliberately ignored the only Federal Circuit decision that is directly on point and most applicable to the current reissue application. In addition, the Examiner failed to correctly apply *Ball*, the seminal Federal Circuit decision regarding recapture, as noted above and discussed more fully below. Both constitute reversible error.

II. **THE FEDERAL CIRCUIT EMPLOYS A THREE-PART TEST TO DETERMINE WHETHER REISSUE CLAIMS IMPROPERLY RECAPTURE SURRENDERED SUBJECT MATTER RELATIVE TO THE ORIGINAL PATENT.**

As a general principle, the Federal Circuit employs a “three-step process” when determining whether a reissue claim seeks to impermissibly recapture subject matter surrendered during prosecution of the original patent. In reality, the “three-step process” comprises a “two-part test” to determine if the recapture rule presumptively applies to a broadening aspect of a claim and a third step that asks whether the claims are sufficiently narrowed in other respects to avoid the recapture rule. This “three-step” process was most recently reiterated and summarized as follows:

Application of the recapture rule is a three-step process. The first step is to “determine whether and in what ‘aspect’ the reissue claims are broader than the patent claims.” [*Mentor*, 998 F.2d at 996, 27 USPQ2d at 1525.] “The second step is to determine whether the broader aspects of the reissued claim related to surrendered subject matter.” *Id.* Finally, the court must determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule. *Hester*, 142 F.3d at 1482-83, 46 USPQ2d at 1649-50; *Clement*, 131 F.3d at 1470, 45 USPQ2d at 1165.

*Pannu v. Storz Instruments, Inc.*, 258 F.3d 1366, 1371 (Fed. Cir. 2001).

By citing *Clement* and *Mentor* in this manner, the court emphasized that the three-step process of *Pannu* is consistent with and incorporates the “two-part test” described in *Clement*, which cited *Mentor*. Indeed, the third part of the three-step test was contained in the version of the MPEP in existence at the time that the above-identified reissue application was filed (*i.e.*, the 1999 edition). Appellants relied upon the third part of the recapture rule when deciding whether to file the present reissue application in the first instance. When an office action cited *Hester* for the proposition that a “surrender” could be made “by way of argument” alone, Appellants relied on the “exception to the recapture rule” articulated therein when amending the claims to avoid the recapture rule.

Later, the U.S. Patent and Trademark Office (“PTO”) modified the MPEP in the next revision (*i.e.*, the 2000 edition) in a manner that appears to have led the Examiner to believe that part three of the recapture rule had been eliminated. In various office actions, the Examiner appears to have relied on the apparent non-existence of step three of the recapture rule in rejecting the claims as impermissibly recapturing surrendered subject matter. The Examiner applied the two-part test of *Clement*, which merely tells whether the recapture rule should presumptively apply, but did not apply the third step to determine whether the recapture rule was avoided. This error was perpetuated by the latest revision of the MPEP (*i.e.*, the 2001 edition), which summarizes the recapture rule under the heading “TWO STEP TEST FOR RECAPTURE”.

MPEP 1412.02. Thus, while the Federal Circuit has applied, and continues to apply, a three-step test when applying the recapture doctrine, the Examiner has consistently failed to properly analyze the reissue claims to determine whether the materially narrowing aspects of the claims avoids the recapture rule. This constitutes reversible error. The current appeal seeks to address this error by the Examiner, which ignores clear Federal Circuit precedent and which unfairly and improperly led to the final rejection of the reissue claims in the present application.

**III. THE EXAMINER HAS CONSISTENTLY AND ERRONEOUSLY APPLIED THE WRONG TEST WHEN APPLYING THE RECAPTURE DOCTRINE IN THE PRESENT REISSUE APPLICATION EVER SINCE THE PRINTING OF THE 2000 EDITION OF THE MPEP.**

Every Office Action issued in the above-identified reissue application subsequent to the printing of the 2000 edition of the MPEP has erroneously applied the two-part test that tells whether recapture may even apply but has ignored the exception to the recapture rule. Moreover, such office actions have erroneously focused on the specific limitation supposedly surrendered rather than considering the overall scope of the claims as they relate to the prior art rejection in question. Only the office action mailed February 4, 2000 prior to the printing of the 2000 edition did not allege recapture of surrendered subject matter based on the elimination of the 2 mm fiber length limitation.

Beginning with the office action dated January 9, 2001, the PTO has consistently rejected the reissue claims on the grounds that eliminating the 2 mm fiber length limitation constitutes a *per se* recapture of subject matter allegedly surrendered during prosecution of the original patent (*i.e.*, because Applicants relied on the 2 mm fiber length limitation to distinguish over *Tiefenbacher et al.*, even though this limitation was not added to the claims but was included in the originally filed claims). In rejecting the claims under 35 U.S.C. § 251, this and each successive office action explicitly or implicitly ignored step three of the three-step test previously

followed by the PTO (*see* MPEP, 1999 edition), more particularly the “exception to the recapture rule” articulated in *Hester* as being applicable where there has been a “surrender by way of argument”.

For example, the office action dated January 9, 2001 made an inventory of every claim limitation found in the issued claims that was added, argued or otherwise relied upon for patentability but omitted or broadened in the reissue claims. The office action simply concluded, without any further analysis, that such omissions or broadenings constituted an impermissible recapture of surrendered subject matter. January 9, 2001 office action, pp. 2-4. The Examiner did not even attempt to “determine whether the reissued claims were materially narrowed in other respects to avoid the recapture rule.” *Pannu*, 258 F.3d at 1371; *see Hester*, F.3d at 1482-83. Instead, the Examiner applied the first two parts of the three-step test but ignored the “exception to the recapture rule”. Appellants responded to this rejection by filing Amendment “C” and Response on March 23, 2001 citing to and arguing the applicability of the “exception to the recapture rule” that is applicable to “a surrender by way of argument” according to *Hester*.

In response to the amendment filed March 23, 2001, the Examiner issued an office action dated June 4, 2001, maintaining the recapture rejection and finally rejecting the claims. In making this rejection, the Examiner continued to rely on *Hester* for the proposition that a “surrender which forms the basis for impermissible recapture ‘can occur through arguments alone’” while failing to apply the “exception to the recapture rule” also discussed in *Hester*. June 6, 2001 office action, p. 5. Moreover, the Examiner made the following illogical argument in response to the parallel argument in Amendment “C” and Response citing *Ball Corp. v. United States*, 729 F.2d 1429, 221 USPQ 289 (Fed. Cir. 1984) for the proposition that improper recapture does not occur so long as the broadened claims also contain other materially narrowing limitations:

The argument that since the claims of the present reissue [sic] are materially narrower in key aspects such that *Ball* does not apply is not persuasive, because the Court in *Ball* held that the recapture rule bars the patentee from acquiring through reissue claims that are, *in all aspects*, of the same scope as, or are broader in scope than, those claims canceled from the original application to obtain a patent. (Emphasis added).

June 6, 2001 office action, p. 5. This argument or conclusion is illogical because the reissue claims at issue were *not* “*in all aspects*, of the *same* scope as, or are *broader in scope* than” claims “canceled” or ever pending at any time during prosecution of the original patent. The reissue claims were clearly of narrower scope with regard to various “other overlooked aspects of the invention” (e.g., the coating composition). Thus, the Examiner was entirely nonresponsive to legitimate arguments raised by Appellants in Amendment “C” and Response, filed March 23, 2001. Subsequent office actions have also been nonresponsive to such arguments.

Moreover, this and every other office action beginning with the office action dated January 9, 2001 erred by focusing solely on specific claim language in the issued claims and omitted from the reissue claims instead of considering the meaning and scope of the claim as a whole. As clearly stated by the Federal Circuit, “[t]he proper focus is on the *scope* of the claims, not on the individual *feature* or *element* purportedly given up during prosecution of the original application. *Ball*, 729 F.2d at 1437 (emphasis in original). “Similarly, the focus is not, as the Government contends, on the specific limitations or on the elements of the claims but, rather, on the *scope* of the claims.” *Ball*, 729 F.2d at 1436 (emphasis in original).

Although the latest Office Action pays lip service to both *Ball* and *Hester*, while purporting to apply the third part of the three-part test of *Pannu*, the Examiner clearly ignored the charge by the Federal Circuit to “focus. . . on the *scope* of the claim, not on the individual *feature* or *element* purportedly given up during prosecution of the original application.” Instead, the Examiner focused solely on the “about 2 mm” language rather than the overall scope of the claims

when determining whether or not the reissue claims “are of the same or broader scope than those claims that were cancelled from the original application.” By doing so, the Examiner disregarded the very case (*Ball*) that she cites in finally rejecting the claims.

Moreover, the latest Office Action clearly disregarded the “exception to the recapture rule” of *Hester* that is applicable where there is “a surrender by way of argument”. Like previous office actions, the current Office Action failed to apply the rule articulated in the only Federal Circuit decision that is directly on point and applicable to the present reissue application, in which the alleged “surrender” occurred solely “by way of argument”. Inexplicably, “[t]he examiner agree[d]” that *Hester* provides an exception to the recapture rule but then failed to apply the “exception to the recapture rule” articulated in *Hester*. Instead, the Examiner purported to follow either the two-part test of MPEP 1412.02 or the three-step test in *Pannu*. Office Action, pp. 4-5. In either case, the Examiner clearly failed to follow the rules generally pertaining to recapture articulated in *Ball* and specifically pertaining to “a surrender by way of argument” discussed in *Hester*.

**IV. THE OFFICE ACTION IMPROPERLY IGNORED THE MATERIALLY NARROWING LIMITATIONS FOUND WITHIN THE REISSUE CLAIMS THAT RELATE TO “OTHER OVERLOOKED ASPECTS OF THE INVENTION” SO AS TO AVOID THE RECAPTURE RULE.**

The present reissue application allegedly involves “a surrender by way of argument” rather than a surrender by “claim amendments or cancellations.” *See Hester*, F.3d at 1481-82. Accordingly, *Hester* is the only case among the line of reissue cases that is directly on point. Moreover, the Federal Circuit acknowledge in *Hester* that *Mentor*, *Clement* and *Ball* do not directly involve a surrender by argument. *See Hester*, F.3d at 1481 (“Prior to this case, this court has not squarely addressed the question” of surrender by argument alone). Thus, any reference in *Mentor*, *Clement* and *Ball* to a surrender by way of argument is *dicta*. *Pannu* similarly does

not involve a surrender by way of argument. Accordingly, while *Pannu* is helpful to the extent that it emphasized that the “two step test for recapture” set forth in MPEP 1412.02 includes the well-known exception to the recapture rule, which highlights the unfairness to which Appellants have been subjected ever since the Examiner began denying the existence of the exception, *Pannu* is clearly less relevant than *Hester* in the present case because only *Hester* is directly on point.

To reiterate, where a claim limitation was not added during prosecution but merely argued to establish the patentability of the claims, “the recapture rule may be avoided in some circumstances” according to the Federal Circuit. *Hester*, 142 F.3d at 1482. To see whether the recapture has been avoided, the Federal Circuit “consider[s] whether the reissue claims were materially narrowed in other respects” in order to offset the effect of broadening a claim limitation merely argued for patentability. *Id.* (citing *Mentor*). “For example, in *Ball* the recapture rule was avoided because the reissue claims were sufficiently narrowed (described by the court as ‘fundamental narrowness’) despite the broadened aspects of the claims. *Id.* (citing *Ball*). “In the context of a surrender by way of argument [as alleged in the present case], this principle, in appropriate cases, may operate to overcome the recapture rule when the reissue claims are materially narrower in other overlooked aspects of the invention.” *Hester*, 142 F.3d at 1482-83. “The purpose of this *exception to the recapture rule* is to allow the patentee to obtain through reissue a scope of protection *to which he is rightfully entitled* for such *overlooked aspects*. *Hester*, 142 F.3d at 1483 (emphasis added).

A. **The Coating Composition Limitation Renders the Reissue Claims “Materially Narrower in [an] Overlooked Aspect[] of the Invention” and PTO Improperly Disregarded these Limitations When Applying the Recapture Rule.**

There is no question that the coating composition limitation contained in each of the independent claims materially narrow the scope of the reissue claims compared to the claims

issued in the original patent. This is evidenced by the fact that this limitation was deemed by the Examiner to overcome the prior art rejections, including the exact same prior art reference (WO 91/12186 to Tiefenbacher et al.) cited in the original patent prosecution. Moreover, because none of the originally filed claims or any subsequent claim within the original application contained the coating composition limitation, this is limitation directed to “overlooked aspects of the invention” according to *Hester*. Cf. *Hester*, 142 F.3d at 1483. Thus, according the “exception to the recapture rule” of *Hester*, the coating composition limitation “operate[s] to overcome the recapture rule.” See *Hester*, 142 F.3d at 1482-83. Because the coating composition limitation objectively provides “fundamental narrowness” to the claims, as that term is defined in *Ball*, “the recapture rule [i]s avoided because the reissue claims were sufficiently narrowed. . . despite the broadened aspects of the claims.” See *Ball* 729 F.2d at 1438.

Moreover, the coating composition limitation helps distinguish the claims over WO 91/12186 to Tiefenbacher et al., which is the exact same reference cited during prosecution of the original patent. Thus, the coating composition limitation directly relates to the “same rejection” as the “about 2 mm” language. Thus, even though *Hester* does not require there to be a direct relationship between the other “overlooked aspects of the invention” and the broadened limitation, to the extent that *Clement* applies and requires the “reissue claim [to be] narrower in an aspect germane to [the] prior art rejection”, the coating composition limitation satisfies this requirement because it relates to the same prior art rejection.

At its core, the reissue statute (35 U.S.C. § 251) allows a patentee to file a reissue application to correct an “error” in the patent. Deliberate cancellation of a specific claim, whether in response to a Restriction Requirement or a prior art rejection, has been held not to constitute an “error” correctable through reissue. However, the failure of an applicant or his or her attorney to appreciate alternative ways to describe an invention has been deemed to be the sort of error that

reissue applications are intended to correct. In both the current application and during prosecution of the original patent, the PTO cited WO 91/12186 to Tiefenbacher et al. Both Appellants and their attorneys failed to appreciate that Tiefenbacher et al. could be distinguished by claiming the composite compositions now recited in claims 32-57 rather than relying on fibrous materials having a length greater than about 2 mm. The coating composition limitation not only relates to an “overlooked aspect of the invention” (*see Hester*) and the same prior art rejection as the broadened limitation (*Clement*), it also forms the basis of a correctable “error” within the meaning of 35 U.S.C. § 251.

Based on the foregoing, claims 32-57 are proper for reissue and do not improperly recapture subject matter surrendered during prosecution of the original patent.

**B. Claims 32-57 Comprise Materially Narrowing Limitations Directly Relating to the Broadened Fibrous Material Limitation.**

In rejecting claims 32-57, the Office Action erroneously stated that

In the present case, the narrowing aspects do not deal with the fibrous material, but rather the coating material and process of forming the composite composition. Thus, following the binding and clear holdings by the Federal Circuit in Pannu, the applicants in the present case are stopped [sic] from attempting to recapture the limitation they argued to overcome the prior art rejections in the original prosecution.

Office Action, p. 5 (emphasis in original). First, in making this argument, the Examiner expressly admitted that the “coating material” and other limitations comprise “narrowing aspects”, thus supporting the arguments and conclusions set forth above in Section IV.A. Second, whereas the Examiner noted the “coating material and process of forming the composite composition” limitations, the Examiner failed to consider materially narrowing claim limitations that do, in fact, relate to the fibrous material. Such limitations materially narrow the reissue

claims in a manner that directly relates to the broadening aspect (*i.e.*, the broadening of the fibrous material limitation).

1. **Independent Claims 32, 46 and 52 Each Recite the Materially Narrowing Limitation that the Fibrous Material Reinforces and Strengthens the Starch-Based Composition of the First Region.**

Each of independent reissue claims 32, 46 and 52 recites a “first region that includes a *fiber-reinforced* starch-based composition”. (Emphasis added.) In addition, each of claims 32, 46 and 52 recites that the fibrous material is dispersed “throughout the intermediate aqueous starch-based composition” in a manner “in order for the fibrous material to *strengthen* the starch-based composition”. (Emphasis Added) None of the issued claims in the original patent or claims cancelled during prosecution of the original application claim a composition that is “fiber-reinforced” (*i.e.*, reinforced by the fibrous material) or that the fibrous material “strengthen[s]” the composition. Nor do fibrous materials inherently strengthen or reinforce starch-based compositions.

For example, the issued claims recite the inclusion of water in the final claimed composition. The reissue claims recite a starch-based composition in which “at least a portion of the water [has been removed] by evaporation” in order to “thereby cause the starch-based binder to become at least partially solidified.”<sup>1</sup> The specification teaches that the fibers, among other things, can act to increase the strength of the solidified starch-based compositions (*i.e.*, the starch-bound matrix). Original patent, col. 43, ll. 10-17. Because aqueous starch-based

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<sup>1</sup> Appellants note that the PTO issued a three-way restriction requirement during prosecution of the original patent application. As explained in previous reissue amendments, Appellants elected claims that recited a starch-based composition comprising starch and a fibrous material but in which the water was merely optional. See elected claims 1 and 17 in the original application. Accordingly, the claimed composite compositions were found to be appropriate for reissue notwithstanding the restriction requirement because they fall within the general scope of the elected starch-based compositions even though they further require a coating composition, which materially narrows the claims in order to claim “other overlooked aspects of the invention.”

compositions generally have no strength, the fibrous material neither reinforces nor strengthens such compositions. Whether fibers strengthen a solidified starch-based composition depends on many interrelated factors such as concentration, their level of dispersion, their aspect ratio and fiber length. Fiber length is but one factor and is not dispositive, as evidenced by the teaching that “shorter fibers of less than about 1.5 mm can also be used” though they “are less preferred”. Original patent, col. 44, *ll.* 34-35.

2. **Reissue Claims 33-36, 51 and 57 Recite Additional Limitations that Further Materially Narrow the Fibrous Material Limitation**

Reissue claim 33 states that the “fibrous material includes fibers having a length less than about 25 mm.” In contrast, neither the issued claims nor the originally filed claims defined an upper or maximum fiber length even though the specification contemplates the use of fibers longer than 25 mm. Original patent, col. 7, *l.* 40 (fibers can be “up to about 25 mm or longer”). Therefore, claim 33 materially narrows the fibrous material limitation so that it directly relates to the broadening aspect of reissue claim 32 (*i.e.*, relative to fiber length). For this additional reason, claim 33 is proper for reissue and does not impermissibly seek to recapture surrendered subject matter.

Reissue claims 34, 51 and 57 on the other hand, recite a maximum fiber length of “about 1.5 mm”. Original patent, col. 44, *ll.* 34-35. Because the issued claims define no maximum fiber length, and because the maximum fiber length of “about 1.5 mm” is less than the minimum fiber length of “about 2 mm” in the issued claims, claims 34, 51 and 47 clearly include a materially narrowing limitation that directly relates to the broadened limitation. Claims 34, 51 and 57 therefore claim an “overlooked aspect of the invention” (*i.e.*, starch-based compositions in which “the fibrous material includes fibers having a length less than about 1.5 mm”). This overlooked

aspect of the invention was not defined by any of the originally filed or issued claims of the original patent application.

Reissue claim 35 recites a specific type of fibrous material that “includes fibers having an aspect ratio in a range from about 40:1 to about 2500:1”. Reissue claim 36 recites a concentration of fibrous material of “about 2% to about 80% by weight of the aqueous starch-based composition”. These overlooked aspects of the invention were not defined by any of the originally filed or issued claims of the original patent application. Moreover, both limitations relate to the strength or reinforcing effect imparted by the fibrous material in the final composition.

C. Notwithstanding Arguments to the Contrary, the Examiner Does not Recognize any Meaningful Exception to the Recapture Rule but Applies a *Per Se* Rule that Rejects any Reissue Claim that Eliminates a Limitation Relied on for Patentability Regardless of the Existence of the Exception to the Recapture Rule.

Finally, it must be emphasized that the Examiner, until the current Office Action, essentially denied the existence of any exception to the recapture rule. And even though the Examiner admitted for the first time that an exception to the recapture rule may exist, the Examiner defended the propriety of following what she understood as the two-part test followed by the PTO (pp. 5-6). Because this belated admission by the Examiner came only after final rejection, the Board should take note of how previous denials of the existence of the exception to the recapture rule have harmed and prejudiced the Appellants.

Moreover, the Examiner has compounded the harm by paying lip service to the exception in the Office Action but then applying it in a fashion that is so restrictive and impossible to comply with as to render it meaningless, especially in the context of “a surrender by way of argument”. First, the Examiner appears to acknowledge that an exception to the recapture rule

exists (*i.e.*, that an applicant can avoid the recapture rule even though the reissue claims broaden a limitation argued to establish patentability of the original claims by including other limitations having a materially narrowing aspect). Office Action, p. 4. Then the Examiner misapplies the relevant case law in a manner that effectively eliminates any possibility of complying with the exception to the recapture rule. Specifically, the Examiner cites *Pannu* for the proposition that a patentee “is stopped [*sic*] from attempting to recapture the precise limitation he added to overcome prior art rejections.” Office Action, p. 5. In other words, the Examiner believes that a “limitation” added to overcome the prior art can never be “recaptured” (*i.e.*, removed or broadened).<sup>2</sup> In view of this, the Examiner appears to apply the same *per se* rule that she previously applied. This is true even though the claims contain materially narrowing limitations that directly relate to the limitation (*i.e.*, the fibrous material limitation) that was broadened during reissue.

If the Examiner were serious about applying the exception to the recapture rule, the Examiner would have been able to suggest a way in which Appellants could have materially narrowed the claims to avoid the recapture rule outside of simply reinstating the “about 2 mm” language. However, in all of Appellants’ dealings with the PTO, no examiner has been able to understand, ascertain or suggest how Applicants could avoid the recapture rule short of maintaining the “about 2 mm” language. This indicates that the Examiner has no understanding as to how to apply the exception to the recapture rule in a manner that does not effectively gut the exception and render it meaningless. It also indicates a failure on the part of the PTO to advise its examination corps as to how the exception to the recapture rule should be applied.

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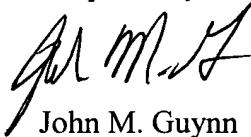
<sup>2</sup>Of course, the “about 2 mm” language was not “added to overcome prior art rejections” but merely argued.

V. **CONCLUSION.**

In view of the foregoing, Appellants believe that claims 32-57 are proper for reissue and do not violate the recapture rule. Appellants therefore request the Board to reverse the final rejection and allow the claims or, at the very least, advise Appellants how to avoid the recapture rule in a manner that permits Appellants to broaden the fibrous material limitation in the manner desired (*i.e.*, by removing the "about 2 mm" language).

Dated this 26<sup>th</sup> day of July 2002.

Respectfully submitted,



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## APPENDIX

32. A composite composition comprising a first region that includes a fiber-reinforced starch-based composition and a second region adjacent to the first region that includes a coating composition, the composite composition formed by the process comprising the steps of:

providing an aqueous starch-based composition including water, a starch-based binder in a concentration greater than about 20% by weight, and a fibrous material having an aspect ratio of at least about 10:1, wherein the intermediate composition has a viscosity greater than about 10 Pa·s, wherein the starch-based binder includes a gelatinized component comprising gelatinized starch in an amount from about 5% to about 70% by weight of the starch-based binder, and wherein the balance of the starch-based binder comprises an ungelatinized component comprising ungelatinized, unmodified starch granules, wherein the gelatinized component aids in the dispersion of the fibrous material throughout the intermediate aqueous starch-based composition during mixing in order for the fibrous material to strengthen the starch-based composition;

forming the first region of the starch-based composite composition by heating the aqueous starch-based composition so as to at least partially gelatinize the starch granules and so as to also remove at least a portion of the water by evaporation to thereby cause the starch-based binder to become at least partially solidified; and

forming the second region of the starch-based composite composition by positioning a coating composition that is resistant to moisture adjacent to the first region, wherein the coating composition is formed from at least one of an edible oil, a drying oil, melamine, an epoxy resin, a terpene resin, polyvinyl chloride, polyvinyl alcohol, polyvinyl acetate, a polyacrylate, hydroxypropylmethylcellulose, methocel, polyethylene glycol, an acrylic, an acrylic copolymer, polyurethane, polylactic acid, polyhydroxybutyrate-hydroxyvalerate copolymer, a biodegradable polyester resin, soybean protein, or a wax.

33. A composite composition as defined in claim 32, wherein the fibrous material includes fibers having a length less than about 25 mm.

34. A composite composition as defined in claim 32, wherein the fibrous material includes fibers having a length less than about 1.5 mm.

35. A composite composition as defined in claim 32, wherein the fibrous material includes fibers having an aspect ratio in a range from about 40:1 to about 2500:1.

36. A composite composition as defined in claim 32, wherein the fibers are included in an amount in a range from about 2% to about 80% by weight of the aqueous starch-based composition.

37. A composite composition as defined in claim 32, wherein the aqueous starch-based composition further includes an inorganic filler included in an amount in a range from about 20% to about 90% by weight of the aqueous starch-based composition.

38. A composite composition as defined in claim 32, wherein the first region includes sufficient void spaces so as to have a density in a range from about 0.05 g/cm<sup>3</sup> to about 1 g/cm<sup>3</sup>.

39. A composite composition as defined in claim 32, wherein the first region includes sufficient void spaces so as to have a density in a range from about 0.1 g/cm<sup>3</sup> to about 0.5 g/cm<sup>3</sup>.

40. A composite composition as defined in claim 32, wherein the first region includes an exterior skin subregion having a density and an interior foam subregion adjacent to the exterior skin subregion having a density that is significantly lower than the density of the exterior skin subregion.

41. A composite composition as defined in claim 32, wherein the first region has a cross-sectional thickness in a range of about 0.5 mm to about 5 mm.

42. A composite composition as defined in claim 32, wherein the coating composition is initially in liquid form when positioned adjacent to the first region.

43. A composite composition as defined in claim 32, wherein the coating composition comprises a laminating material.

44. A composite composition as defined in claim 32, wherein the coating composition comprises a substantially uniform film.

45. A composite composition as defined in claim 32, wherein the starch-based binder includes at least one of native starch or a starch derivative.

46. A composite composition comprising a first region that includes a fiber-reinforced starch-based composition and a second region adjacent to the first region that includes a laminating composition, the composite composition formed by the process comprising the steps of:

providing an aqueous starch-based composition including water, a starch-based binder in a concentration greater than about 20% by weight, and a fibrous material having an aspect ratio of at least about 10:1, wherein the intermediate composition has a viscosity greater than about 10 Pa·s, wherein the starch-based binder includes a gelatinized component comprising gelatinized starch in an amount from about 5% to about 70% by weight of the starch-based binder, and wherein the balance of the starch-based binder comprises an ungelatinized component comprising ungelatinized, unmodified starch granules, wherein the gelatinized component aids in the dispersion of the fibrous material throughout the intermediate aqueous starch-based composition during mixing in order for the fibrous material to strengthen the starch-based composition;

forming the first region of the starch-based composite composition by heating the aqueous starch-based composition so as to at least partially gelatinize the starch granules and so as to also remove at least a portion of the water by evaporation to thereby cause the starch-based binder to become at least partially solidified; and

forming the second region of the starch-based composite composition by positioning a substantially solid laminating composition that is resistant to moisture adjacent to the first region after the starch-based binder has become at least partially solidified.

47. A composite composition as defined in claim 46, wherein the laminating composition is formed from a biodegradable polymer selected from the group consisting of cellulosic ethers, cellulose acetate, starches, biodegradable polyamides, polyvinyl alcohol, polyvinyl acetate, polylactic acid, polyhydroxybutyrate-hydroxyvalerate copolymer, other biodegradable polyester resins, soybean protein, and mixtures thereof.

48. A composite composition as defined in claim 46, wherein the laminating composition comprises a substantially uniform film.

49. A composite composition as defined in claim 46, wherein the first region includes an exterior skin subregion having a density and an interior foam subregion adjacent to the exterior skin subregion having a density that is significantly lower than the density of the exterior skin subregion.

50. A composite composition as defined in claim 46, wherein the starch-based binder includes at least one of native starch or a starch derivative.

51. A composite composition as defined in claim 46, wherein the fibrous material includes fibers having a length less than about 1.5 mm.

52. A composite composition comprising a first region that includes a fiber-reinforced starch-based composition and a second region adjacent to the first region that includes a biodegradable material, the composite composition formed by the process comprising the steps of:

providing an aqueous starch-based composition including water, a starch-based binder in a concentration greater than about 20% by weight, and a fibrous material having an aspect ratio of at least about 10:1, wherein the intermediate composition has a viscosity greater than about 10 Pa·s, wherein the starch-based binder includes a gelatinized component comprising gelatinized starch in an amount from about 5% to about 70% by weight of the starch-based binder, and wherein the balance of the starch-based binder comprises an ungelatinized component comprising ungelatinized, unmodified starch granules, wherein the gelatinized component aids in the dispersion of the fibrous material throughout the intermediate aqueous starch-based composition during mixing in order for the fibrous material to strengthen the starch-based composition;

forming the first region of the starch-based composite composition by heating the aqueous starch-based composition so as to at least partially gelatinize the starch granules and so as to also remove at least a portion of the water by evaporation to thereby cause the starch-based binder to become at least partially solidified, wherein the first region includes an exterior skin subregion having a density and an interior foam subregion adjacent to the exterior skin subregion having a density that is significantly lower than the density of the exterior skin subregion; and

forming the second region of the starch-based composite composition by positioning a biodegradable material adjacent to the first region, the biodegradable material being formed from at least one of a biodegradable polyester resin, polyvinyl alcohol, polyvinyl acetate, polylactic acid, or a polyhydroxybutyrate-hydroxyvalerate copolymer.

53. A composite composition as defined in claim 52, wherein the starch-based binder includes at least one of native starch or a starch derivative.

54. A composite composition as defined in claim 52, wherein the biodegradable material is initially in liquid form when positioned adjacent to the first region.

55. A composite composition as defined in claim 52, wherein the coating composition comprises a laminating material.

56. A composite composition as defined in claim 52, wherein the biodegradable material is a substantially uniform film.

57. A composite composition as defined in claim 52, wherein the fibrous material includes fibers having a length less than about 1.5 mm.

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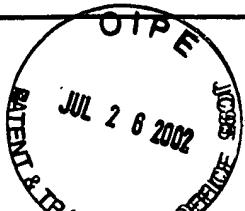
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Applicant(s): Andersen et al.

Docket No.

11527.209/2

Serial No.  
09/390,583Filing Date  
September 2, 1999Examiner  
Leanna M. RocheGroup Art Unit  
1771Invention: COATED STARCH-BASED COMPOSITIONS AND METHODS FOR MANUFACTURING  
STARCH-BASED COMPOSITIONS

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Docket No.  
11527.209.2

In Re Application Of: Andersen et al.

Serial No.  
09/390,583Filing Date  
September 2, 1999Examiner  
Leanan M. RocheGroup Art Unit  
1771Invention: COATED STARCH-BASED COMPOSITIONS AND METHODS FOR MANUFACTURING  
STARCH-BASED COMPOSITION

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- The Commissioner has already been authorized to charge fees in this application to a Deposit Account. A duplicate copy of this sheet is enclosed.
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John M. Guynn  
Attorney for Applicants  
Registration No. 36,153



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